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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,006	02/16/2006	Koji Kawaguchi	FEC 144NP	7009

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EXAMINER	
HOLLWEG, THOMAS A	

ART UNIT	PAPER NUMBER
2879	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/520,006	KAWAGUCHI ET AL.	
	Examiner	Art Unit	
	Thomas A. Hollweg	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 September 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *8-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 December 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/30/04, 2/16/06, 9/14/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Preliminary Amendment

1. Applicant's Preliminary Amendment, received December 30, 2004, is acknowledged. The substitute Specification is acknowledged and entered. The substitute Abstract is acknowledged and entered. Claims 1-7 are cancelled and claims 8-14 have been added. Therefore, claims 8-14 are currently pending.

Information Disclosure Statement

2. The information disclosure statements (IDS) submitted on December 30, 2004, February 16, 2006, and September 14, 2007 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: stripping liquid 104, page 15, line 20. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. The following claims are objected to because of the following informalities:

a. Claim 8, line 23, the phrase "at edges of the color-converting filters" is unclear. The shape of the color-converting filters is not defined and no edges are described. Also, the figures do not clarify what is meant by this limitation.

b. Claims 13 and 14, "efficient thermal conductor" is not defined.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 8-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pichler, WO 02/11209 A2, in view of Yamazaki et al., U.S. Patent No. 6,815,723 B2.

7. With regard to claim 8, in figures 2, 10 and 14, Pichler discloses an organic electroluminescent display, comprising: (a) an organic light-emitting device including, in the recited sequence, a substrate (101), thin film transistors (not shown, page 2, lines 13-16) that each have a source and a drain, anodes or cathodes that include an electrically conductive thin film material (102) and are each connected to the source or the drain on a corresponding one of the thin film transistors, an organic

electroluminescent light-emitting layer (104), an upper transparent electrode (106) that is a cathode or anode and includes a transparent electrically conductive material, and at least one passivation layer (107) on the upper transparent electrode (106), and which is driven by the thin film transistors; (b) a color-converting substrate that comprises a transparent supporting substrate (fig. 14, 1401), and color-converting filters (210, 212) that comprise color filter layers (fig. 10, 1002) alone, or color filter layers (fig. 10, 1002) and color-converting layers (210, 212), and are formed on the supporting substrate (fig. 14, 1401); (c) an adhesive layer (1403) that disposed is between the organic light-emitting device (fig. 14, 1404) and the color-converting filters (fig. 14, 1402), and that bonds the organic light-emitting device (fig. 14, 1404) and the color-converting filters (fig. 14, 1402) together with the color-converting filters (210, 212) facing the upper transparent electrode (106) of the organic light-emitting device (fig. 14, 1404) (page 8, line 24 - page 10, line 23; page 16, lines 6-12; page 18, lines 24-32).

8. Although Pichler discloses protective layers (fig. 2, 107, 207; fig. 14, 1402) between and among the organic EL device (102-106) and the color-converting filters (209-212), it does not expressly disclose that the layers were stress-relieving layers. Yamazaki teaches that stress is a problem that shortens the life of EL devices (col. 4, lines 35-44), and further teaches, in figures 1B, 3B and 5A, a stress reliving layer (32; fig. 5, 203) (col. 9,lines 46-37 & col. 9, line 57 – col. 10, line 25). The stress relieving layer (33) taught by Yamazaki is disposed between the organic light-emitting device and the color filters.

9. At the time of invention, it would have been obvious for a person having ordinary skill in the art to construct the Pichler organic electroluminescent display wherein a stress-relieving layer is disposed between the organic light-emitting device and the color-converting filters, as taught by Yamazaki. Including a stress relieving layer would protect the device from environmental changes and increase reliability of the display, as taught by Yamazaki (col. 10, lines 23-25).

10. With regard to claim 9, the stress-relieving layer taught by Yamazaki is intended to relieve physical stress (col. 4, lines 35-44) is intended to relieve physical stress, therefore it would include a resin having a higher elasticity than the adhesive layer.

11. With regard to claim 10, both Pichler and Yamazaki are silent as to the refractive indices of the stress-relieving layer and the adhesive layer. However, in the Pichler device, as modified by Yamazaki, light will pass through both the stress-relieving layer and the adhesive layer. One having ordinary skill in the art would understand that the refractive indices of the layers will affect the light transmission and the luminous efficiency of the device, and these indices should be selected to maximize efficiency.

12. Therefore, at the time of invention, it would have been obvious for a person having ordinary skill in the art to construct the Pichler device, as modified by Yamazaki, where the stress-relieving layer has a lower refractive index than the adhesive layer in order to maximize efficiency of the device.

13. With regard to claim 11, Yamazaki does not expressly disclose that stress-relieving layer has a reverse tapered shape relative to the color filter layers alone, or the color filter layers and the color-converting layers, of the color-converting filters.

However, one having ordinary skill in the art would understand that the shape of the stress-relieving layer will affect the path of the light as it passes through the device. The particular shape chose is considered to be a matter of design choice related to the desired path of the light passing through the device.

14. Therefore, at the time of invention, it would have been an obvious design choice for a person having ordinary skill in the art to construct the Pichler device, as modified by Yamazaki, where the stress-relieving layer has a reverse tapered shape relative to the color filter layers alone, or the color filter layers and the color-converting layers, of the color-converting filters, so as to control the path of the light passing through the device.

15. With regard to claim 12, neither Pichler, nor Yamazaki expressly disclose that the stress-relieving layer is black. However, Yamazaki, in figure 1B, teaches a black layer (31a) between the light emission areas (col. 7, line 56-60), to improve the resolution of the display device. One having ordinary skill would understand that resolution is improved where the spaces between the light emission areas are made black or light absorbent, and any layer in those spaces, including the stress-relieving layer, can be made black to achieve the same result.

16. Therefore, at the time of invention, it would have been obvious for a person having ordinary skill in the art to construct the Pichler device, as modified by Yamazaki, where the stress-relieving layer is black to improve the resolution of the device.

17. With regard to claim 13, Yamazaki teaches that the stress-relieving layer is an efficient thermal conductor (col. 9, lines 26-47).

18. With regard to claim 14, the stress-relieving layer, taught by Yamazaki, as discussed in the rejection of claim 8, is not expressly made of a polymeric material. However, in the Yamazaki device of figure 1B, this stress-relieving layer (32) is coupled with a protective layer (33), which together function to protect the organic EL device from outside contamination and physical stress. Similar layers are disclosed by Pichler (fig. 2, 107, 207; fig. 14, 1402), which perform a similar function. The Pichler protective layers are made of polymeric materials (page 19, lines 7-19).

19. Based on the teachings of Yamazaki and Pichler, at the time of invention, it would have been obvious for a person having ordinary skill in the art to construct the Pichler device, as modified by Yamazaki, where the stress-relieving layer is formed from a polymeric material having an efficient thermal conductor dispersed therein. Because these materials are taught by both references as suitable for protecting the device from both outside contamination and physical stress.

Conclusion

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas A. Hollweg whose telephone number is (571) 270-1739. The examiner can normally be reached on Monday through Friday 7:30am-5:00pm E.S.T..

21. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

22. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TH/

/Nimeshkumar Patel/
Supervisory Patent Examiner, Art Unit 2879